

MELPAR, INC. 7700 ARLINGTON BOULEVARD, FALLS CHURCH, VIRGINIA 22046  
A SUBSIDIARY OF WESTINGHOUSE AIR BRAKE COMPANY



27 October 1967

U. S. Atomic Energy Commission  
Washington, D. C. 20545

Attention: Isotopes Branch  
Division of Materials Licensing

Re: Byproduct Material License #45-07548-01  
Supplementary Application

Gentlemen:

Enclosed herewith find supplementary application, executed in duplicate, requesting an amendment to the above license.

This amendment requests the addition of Rubidium 86, Iodine 125 and Iodine 131 to the authorized byproduct materials in our license.

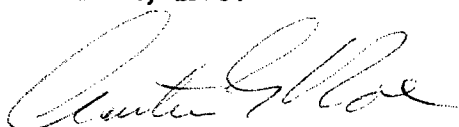
In addition, we request the addition of W. R. DeBoskey, V. J. DeCarlo, R. J. Fallon, A. D. McMaster and L. J. Stief as individual users of byproduct materials.

The following individual users have left the Company and should be deleted from our license: D. E. Lorenz, W. J. Patterson and Dr. V. R. Usdin.

If there is any further information you desire, we will be pleased to furnish it.

Very truly yours,

MELPAR, INC.

  
Austin G. Roe  
Secretary and House Counsel

DUPLICATED  
FOR DIV. OF COMPLIANCE

98002

A-776

614 RLB

Form AEC-313  
8-64  
10 CFR 30

UNITED STATES ATOMIC ENERGY COMMISSION  
**SUPPLEMENTARY APPLICATION FOR BYPRODUCT MATERIAL LICENSE**

Form approved.  
Budget Bureau No. 38-R027

**INSTRUCTIONS.**—Complete Items 1 through 16 if this is an initial application or an application for renewal of a license. Information contained in previous applications filed with the Commission with respect to Items 8 through 15 may be incorporated by reference provided references are clear and specific. Use supplemental sheets where necessary. Item 16 must be completed on all applications. Mail two copies to: U.S. Atomic Energy Commission, Washington, D.C., 20545, Attention: Isotopes Branch, Division of Materials Licensing. Upon approval of this application, the applicant will receive an AEC Byproduct Material License. An AEC Byproduct Material License is issued in accordance with the general requirements contained in Title 10, Code of Federal Regulations, Part 30, and the licensee is subject to Title 10, Code of Federal Regulations, Part 20.

<p>1. (a) NAME AND STREET ADDRESS OF APPLICANT. (Institution, firm, hospital, person, etc. Include ZIP Code.)</p> <p>Melpar, Inc. 7700 Arlington Boulevard Falls Church, Fairfax County Virginia 22046</p>	<p>(b) STREET ADDRESS(ES) AT WHICH BYPRODUCT MATERIAL WILL BE USED. (If different from 1 (a). Include ZIP Code.)</p> <p>1. 7700 Arlington Blvd., Falls Church, Fairfax County, Virginia 22046 2. Melpar Shirley Research Plant, Shirley Industrial Area, Springfield, Fairfax County, Virginia</p>
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<p>2. DEPARTMENT TO USE BYPRODUCT MATERIAL</p> <p>Research</p>	<p>3. PREVIOUS LICENSE NUMBER(S). (If this is an application for renewal of a license, please indicate and give number.)</p> <p>#45-07548-01</p>
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<p>4. INDIVIDUAL USER(S). (Name and title of individual(s) who will use or directly supervise use of byproduct material. Give training and experience in Items 8 and 9.) ADD to list of individual users:</p> <p>Wentzle R. DeBoskey, Vincent J. DeCarlo, Robert J. Fallon, Alexander D. McMaster and Louis J. Stief</p>	<p>5. RADIATION PROTECTION OFFICER (Name of person designated as radiation protection officer if other than individual user. Attach resume of his training and experience as in Items 8 and 9.)</p> <p>No change</p>
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<p>6. (a) BYPRODUCT MATERIAL. (Elements and mass number of each.)</p> <p>ADD as new subitems N., O., and P. of item 6 of existing license:</p> <p>N. Rubidium 86</p> <p>O. Iodine 125</p> <p>P. Iodine 131</p>	<p>(b) CHEMICAL AND/OR PHYSICAL FORM AND MAXIMUM NUMBER OF MILLICURIES OF EACH CHEMICAL AND/OR PHYSICAL FORM THAT YOU WILL POSSESS AT ANY ONE TIME. (If sealed source(s), also state name of manufacturer, model number, number of sources and maximum activity per source.)</p> <p>ADD as new subitems N., O., and P. of Items 7 &amp; 8 of existing license:</p> <table border="0"> <tr> <td>N. Rubidium Chloride in hydrochloride solution</td> <td>-</td> <td>10 m. c.</td> </tr> <tr> <td>O. Iodide</td> <td>-</td> <td>100 m. c.</td> </tr> <tr> <td>P. Iodide</td> <td>-</td> <td>100 m. c.</td> </tr> </table>	N. Rubidium Chloride in hydrochloride solution	-	10 m. c.	O. Iodide	-	100 m. c.	P. Iodide	-	100 m. c.
N. Rubidium Chloride in hydrochloride solution	-	10 m. c.								
O. Iodide	-	100 m. c.								
P. Iodide	-	100 m. c.								

7. DESCRIBE PURPOSE FOR WHICH BYPRODUCT MATERIAL WILL BE USED. (If byproduct material is for "human use," supplement A (Form AEC-313a) must be completed in lieu of this item. If byproduct material is in the form of a sealed source, include the make and model number of the storage container and/or device in which the source will be stored and/or used.)

ADD as new subitems N., O., and P. of Item 9 of existing license:

N. Laboratory Tracer Study of the diffusion of Rubidium metal into glass and other laboratory research investigations.

O. To be used as Tracer in labeling proteins for in vitro research studies.

P. To be used as Tracer in labeling proteins for in vitro research studies.

98002

TRAINING AND EXPERIENCE OF EACH INDIVIDUAL NAMED IN ITEM 4 (Use supplemental sheets if necessary)

8. TYPE OF TRAINING	WHERE TRAINED	DURATION OF TRAINING	ON THE JOB (Circle answer)		FORMAL COURSE (Circle answer)	
			Yes	No	Yes	No
a. Principles and practices of radiation protection	See attached sheets		Yes	No	Yes	No
b. Radioactivity measurement standardization and monitoring techniques and instruments			Yes	No	Yes	No
c. Mathematics and calculations basic to the use and measurement of radioactivity			Yes	No	Yes	No
d. Biological effects of radiation			Yes	No	Yes	No

9. EXPERIENCE WITH RADIATION. (Actual use of radioisotopes or equivalent experience.)

ISOOTOPE	MAXIMUM AMOUNT	WHERE EXPERIENCE WAS GAINED	DURATION OF EXPERIENCE	TYPE OF USE
See attached sheets #1 thru #5				

10. RADIATION DETECTION INSTRUMENTS. (Use supplemental sheets if necessary.)

TYPE OF INSTRUMENTS (Include make and model number of each)	NUMBER AVAILABLE	RADIATION DETECTED	SENSITIVITY RANGE (mr/hr)	WINDOW THICKNESS (mg/cm <sup>2</sup> )	USE (Monitoring, surveying, measuring)
No change					

11. METHOD, FREQUENCY, AND STANDARDS USED IN CALIBRATING INSTRUMENTS LISTED ABOVE.

No change

12. FILM BADGES, DOSIMETERS, AND BIO-ASSAY PROCEDURES USED. (For film badges, specify method of calibrating and processing, or name of supplier.)

No change

INFORMATION TO BE SUBMITTED ON ADDITIONAL SHEETS IN DUPLICATE

13. FACILITIES AND EQUIPMENT. Describe laboratory facilities and remote handling equipment, storage containers, shielding, fume hoods, etc. Explanatory sketch of facility is attached. (Circle answer) Yes No **No change**

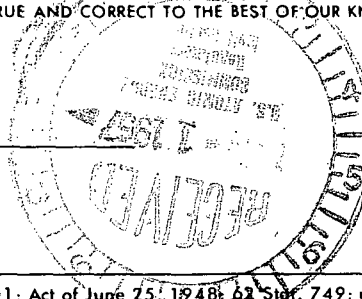
14. RADIATION PROTECTION PROGRAM. Describe the radiation protection program including control measures. If application covers sealed sources, submit leak testing procedures where applicable, name, training, and experience of person to perform leak tests, and arrangements for performing initial radiation survey, servicing, maintenance and repair of the source. **No change**

15. WASTE DISPOSAL. If a commercial waste disposal service is employed, specify name of company. Otherwise, submit detailed description of methods which will be used for disposing of radioactive wastes and estimates of the type and amount of activity involved.

CERTIFICATE (This item must be completed by applicant)

16. THE APPLICANT AND ANY OFFICIAL EXECUTING THIS CERTIFICATE ON BEHALF OF THE APPLICANT NAMED IN ITEM 1, CERTIFY THAT THIS APPLICATION IS PREPARED IN CONFORMITY WITH TITLE 10, CODE OF FEDERAL REGULATIONS, PART 30, AND THAT ALL INFORMATION CONTAINED HEREIN, INCLUDING ANY SUPPLEMENTS ATTACHED HERETO, IS TRUE AND CORRECT TO THE BEST OF OUR KNOWLEDGE AND BELIEF.

Date 27 October 1967



MELPAR, INC.

Applicant named in item 1

J. P. Chambers  
Vice President

Title of certifying official

WARNING.— 18 U. S. C., Section 1001; Act of June 25, 1948, 62 Stat. 749; makes it a criminal offense to make a willfully false statement or representation to any department or agency of the United States as to any matter within its jurisdiction.

WENTZLE R. DE BOSKEY

Data with Respect to Training and Experience  
(Reference: Items 8 & 9, Form AEC-313)

Item 8.

Wentzle R. DeBoskey, Branch Supervisor (Research)

B.S. - Physics - Virginia Polytechnical Institute

M.S. - Metallurgy - Virginia Polytechnical Institute

<u>Type of Training</u>	<u>Where</u>	<u>Duration</u>	<u>On the Job</u>	<u>Formal Course</u>
a) Principles...	Westinghouse Elec. Babcock & Wilcox	5 years 4 1/2 yrs.	yes yes	yes yes
b) Radioactivity...	Westinghouse Elec. Babcock & Wilcox	5 years 4 1/2 yrs.	yes yes	yes yes
c) Mathematics...	Va. Polytech. Inst. Westinghouse Elec. Babcock & Wilcox	B.S. Physics 5 years 4 1/2 yrs.	no yes yes	yes yes no
d) Biological.....	Westinghouse Elec.	3 weeks	no	yes

Item 9.

Experience with Radiation

<u>Isotope</u>	<u>Max. Amt.</u>	<u>Where</u>	<u>Duration</u>	<u>Type of Use</u>
Fission Products and Fuels	Mega curie levels following extended irradiations	Westinghouse Elec. Babcock & Wilcox	5 years 4 1/2 yrs.	R&D R&D



DR. VINCENT J. DE CARLO

Data with Respect to Training and Experience  
(Reference: Items 8 & 9, Form AEC-313)

Item 8.

Dr. Vincent J. DeCarlo, Branch Supervisor (Research)

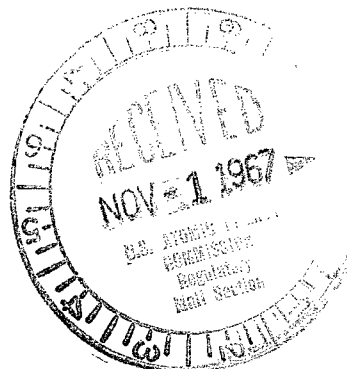
Ph. D. - Physical Chemistry - Catholic University of America

<u>Type of Training</u>	<u>Where</u>	<u>Duration</u>	<u>On the Job</u>	<u>Formal Course</u>
a) Principles...	Catholic Univ.	1 year	no	yes
	Melpar, Inc.	1 year	yes	no
b) Radioactivity...	Catholic Univ.	1 year	no	yes
	Melpar, Inc.	1 year	yes	no
c) Mathematics...	Catholic Univ.	5 years	no	yes
d) Biological.....	Catholic Univ.	1 year	no	yes

Item 9.

Experience with Radiation

<u>Isotope</u>	<u>Max. Amt.</u>	<u>Where</u>	<u>Duration</u>	<u>Type of Use</u>
H <sup>3</sup> , Tritium	1 curie	Melpar, Inc.	1 year	excite gases
Po <sup>210</sup>	1 Micro-curie	Melpar, Inc.	1 year	excite gases



DR. ROBERT J. FALLON

Data with Respect to Training and Experience  
(Reference: Items 8 & 9, Form AEC-313)

Item 8.

Dr. Robert J. Fallon, Senior Scientist

Ph.D. - Physical Chemistry, Catholic University of America

<u>Type of Training</u>	<u>Where</u>	<u>Duration</u>	<u>On the Job</u>	<u>Formal Course</u>
a) Principles...	Catholic Univ. Melpar, Inc.	1 1/2 yrs. 1 year	no yes	yes no
b) Radioactivity...	Catholic Univ. Melpar, Inc.	1 1/2 yrs. 1 year	no yes	yes no
c) Mathematics...	Catholic Univ.	5 years	no	yes
d) Biological.....	Catholic Univ.	1 1/2 yrs.	no	yes

Item 9.

Experience with Radiation

<u>Isotope</u>	<u>Max. Amt.</u>	<u>Where</u>	<u>Duration</u>	<u>Type of Use</u>
H <sup>3</sup> , Tritium	1 curie	Melpar, Inc.	1 year	excite gases
Po <sup>210</sup>	1 micro- curie	Melpar, Inc.	1 year	excite gases

ALEXANDER D. McMASTER

Data with Respect to Training and Experience  
(Reference: Items 8 & 9, Form AEC-313)

Item 8.

Alexander D. McMaster, Senior Physicist

B. S. - Mechanical Technology - Long Island Agricultural  
and Technical Institute

<u>Type of Training</u>	<u>Where</u>	<u>Duration</u>	<u>On the Job</u>	<u>Formal Course</u>
a) Principles...	General Electric Co. Knolls Atomic Power Lab.	5 1/2 yrs.	yes	yes
b) Radioactivity...	General Electric Co. Knolls Atomic Power Lab.	5 1/2 yrs.	yes	yes
c) Mathematics...	General Electric Co. Knolls Atomic Power Lab.	5 1/2 yrs.	yes	yes
d) Biological.....	General Electric Co. Knolls Atomic Power Lab.	5 1/2 yrs.	yes	yes

Item 9.

Experience with Radiation

<u>Isotope</u>	<u>Max. Amt.</u>	<u>Where</u>	<u>Duration</u>	<u>Type of Use</u>
U235	0.1 m. c.	General Electric	5 1/2 yrs.	metallography Lab.
U238	0.1 m. c.	General Electric	5 1/2 yrs.	metallography lab.

Also worked with 100 KV Electron Microscope and 60 KV X-ray Diffraction Unit at Melpar for 4 years.

DR. LOUIS J. STIEF

Data with Respect to Training and Experience  
(Reference: Items 8 & 9, Form AEC-313)

Item 8.

Dr. Louis J. Stief, Senior Scientist

B. A. - LaSalle College  
Ph. D. - Catholic University of America

<u>Type of Training</u>	<u>Where</u>	<u>Duration</u>	<u>On the Job</u>	<u>Formal Course</u>
a) Principles...	Nat'l. Bureau of Standards LaSalle College	1 1/2 yrs. 6 months	yes no	yes yes
b) Radioactivity...	LaSalle College	6 months	no	yes
c) Mathematics...	LaSalle College & Catholic Univ.	2 years	no	yes
d) Biological.....	LaSalle College	6 months	no	yes

Item 9.

Experience with Radiation

<u>Isotope</u>	<u>Max. Amt.</u>	<u>Where</u>	<u>Duration</u>	<u>Type of Use</u>
Co <sup>60</sup>	2,000 curies	Nat'l. Bureau of Standards, Washington, D. C.	1 1/2 yrs.	research on decomposition of gases and solids by gamma radiation.

